

Consumer Product Safety Commission

§ 1631.4

U.S.C. 1191), and the procedures under that act for setting standards (part 1607 of this Chapter), the following definitions apply for the purposes of this Standard:

(a) *Acceptance Criterion* means that at least seven out of eight individual specimens of a small carpet or rug shall meet the test criterion as defined in this Standard.

(b) *Test Criterion* means the basis for judging whether or not a single specimen of small carpet or rug has passed the test, i.e., the charred portion of a tested specimen shall not extend to within 2.54 cm. (1.0 in.) of the edge of the hole in the flattening frame at any point.

(c) *Small Carpet* means any type of finished product made in whole or in part of fabric or related material and intended for use or which may reasonably be expected to be used as a floor covering which is exposed to traffic in homes, offices, or other places of assembly or accommodation, and which may or may not be fastened to the floor by mechanical means such as nails, tacks, barbs, staples, adhesives, and which has no dimension greater than 1.83 m. (6 ft.) and an area not greater than 2.23 m.² (24 sq. ft.). Products such as "Carpet Squares" with dimensions smaller than these but intended to be assembled, upon installation, into assemblies which may have dimensions greater than these, are excluded from this definition. They are, however, included in the Standard for the surface flammability of carpets and rugs (FF 1-70) (subpart A of part 1630 of this Chapter). Mats, hides with natural or synthetic fibers, and other similar products are included in this definition if they are within the defined dimensions, but resilient floor coverings such as linoleum, asphalt tile and vinyl tile are not.

(d) *Small Rug* means, for the purposes of this Standard, the same as small carpet and shall be accepted as interchangeable with small carpet.

(e) *Traffic Surface* means a surface of a small carpet or rug which is intended to be walked upon.

(f) *Timed Burning Tablet* (pill) means the methenamine tablet, weighing approximately 0.149 grams (2.30 grains), sold as Product No. 1588 in Catalog No.

79, December 1, 1969, by the Eli Lilly Company of Indianapolis, Ind. 46206, or an equal tablet.

(g) *Fire-Retardant Treatment* means any process to which a small carpet or rug has been exposed which significantly decreases the flammability of that small carpet or rug and enables it to meet the acceptance criterion of this Standard.

§ 1631.2 Scope and application.

(a) This Standard provides a test method to determine the surface flammability of small carpets and rugs when exposed to a standard small source of ignition under carefully prescribed draft-protected conditions. It is applicable to all types of small carpets and rugs used as floor covering materials regardless of their method of fabrication or whether they are made of natural or synthetic fibers or films, or combinations of, or substitutes for these.

(b) One of a kind small carpet or rug, such as an antique, an Oriental or a hide, may be excluded from testing under this Standard pursuant to conditions established by the Consumer Product Safety Commission.

§ 1631.3 General requirements.

(a) *Summary of test method.* This method involves the exposure of each of eight conditioned, replicate specimens of a small carpet or rug to a standard igniting source in a draft-protected environment and measurement of the proximity of the charred portion to the edge of the hole in the prescribed flattening frame.

(b) *Test criterion.* A specimen passes the test if the charred portion does not extend to within 2.54 cm. (1.0 in.) of the edge of the hole in the flattening frame at any point.

(c) *Acceptance criterion.* At least seven of the eight specimens shall meet the test criterion in order to conform with this Standard.

§ 1631.4 Test procedure.

(a) *Apparatus*—(1) *Test chamber.* The test chamber shall consist of an open

top hollow cube made of noncombustible material¹ with inside dimensions 30.48 × 30.48 × 30.48 cm. (12 × 12 × 12 in.) and a minimum of 6.35 mm. (¼ in.) wall thickness. The flat bottom of the box shall be made of the same material as the sides and shall be easily removable. The sides shall be fastened together with screws or brackets and taped to prevent air leakage into the box during use.

NOTE: A minimum of two chambers and two extra bottoms is suggested for efficient operation.

(2) *Flattening frame.* A steel plate, 22.86 × 22.86 cm. (9 × 9 in.) 6.35 mm. (¼ in.) thick with a 20.32 cm. (8 in.) diameter hole in its center is required to hold the specimen flat during the course of the test. It is recommended that one be provided for each test chamber.

(3) *Standard igniting source.* No. 1588 methenamine timed burning tablet or an equal tablet. These tablets shall be stored in a desiccator over a desiccant for 24 hours prior to use. (Small quantities of absorbed water may cause the tablets to fracture when first ignited. If a major fracture occurs, any results from that test shall be ignored, and it shall be repeated.)

(4) *Test specimens.* Each test specimen shall be a 22.86 × 22.86 cm. (9 × 9 in.) section of the small carpet or rug to be tested. Eight specimens are required.

(5) *Circulating air oven.* A forced circulation drying oven capable of removing the moisture from the specimens when maintained at 105 °C. (221 °F.) for 2 hours.²

(6) *Desiccating cabinet.* An airtight and moisture tight cabinet capable of holding the floor covering specimens horizontally without contacting each other during the cooling period following drying, and containing silica gel desiccant.

(7) *Gloves.* Nonhygroscopic gloves (such as rubber or polyethylene) for

handling the sample after drying and raising the pile on specimens prior to testing.

(8) *Hood.* A hood capable of being closed and having its draft turned off during each test and capable of rapidly removing the products of combustion following each test. The front or sides of the hood should be transparent to permit observation of the tests in progress.

(9) *Mirror.* A small mirror mounted above each test chamber at an angle to permit observation of the specimen from outside the hood.

(10) *Vacuum cleaner.* A vacuum cleaner to remove all loose material from each specimen prior to conditioning. All surfaces of the vacuum cleaner contacting the specimen shall be flat and smooth.

(b) *Sampling—(1) Selection of samples.*

(i) Select a sample of the material representative of the lot and large enough to permit cutting eight test specimens 22.86 × 22.86 cm. (9 × 9 in.) free from creases, fold marks, delaminations or other distortions. The representative sample of material may require the use of more than one small carpet or rug. The test specimens should contain the most flammable parts of the traffic surface at their centers. The most flammable area may be determined on the basis of experience or through pre-testing.

(ii) If the small carpet or rug has had a fire-retardant treatment, or is made of fibers which have had a fire-retardant treatment, the selected sample or over-sized specimens thereof shall be washed, prior to cutting of test specimens, either 10 times under the washing and drying procedure prescribed in Method 124–1967 of the American Association of Textile Chemists and Colorists [washing procedure 6.2 (III) with a water temperature of 60±2.8 °C (140±5 °F.), drying procedure 6.3.2(B), maximum load 3.64 kg (8 pounds)],³ or such number of times under such other washing and drying procedures as shall previously have been found to be equivalent by the Consumer Product Safety

¹6.35 mm. (¼ in.) cement asbestos board is a suitable material.

²Option 1 of ASTM D 2654–67T, "Methods of Test for Amount of Moisture in Textile Materials," describes a satisfactory oven. ("1969 Book of ASTM Standards," part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

³Technical Manual of the American Association of Textile Chemists and Colorists, vol. 45, 1969, published by AATCC, Post Office Box 12215, Research Triangle Park, NC 27709.

Commission. Alternatively, the selected sample or oversized specimens thereof may be washed, dry-cleaned, or shampooed 10 times, prior to cutting of test specimens, in such manner as the manufacturer or other interested party shall previously have established to the satisfaction of the Consumer Product Safety Commission is normally used for that type of small carpet or rug in service.

(2) *Cutting.* Cut eight 22.86 ± 0.64 cm. ($9 \pm \frac{1}{4}$ in.) square specimens of each small carpet or rug to be tested to comply with paragraph (b)(1) of this section.

(c) *Conditioning.* (1) Clean each specimen with the vacuum cleaner until it is free of all loose ends left during the manufacturing process and from any material that may have been worked into the pile during handling.⁴ Care must be exercised to avoid "fuzzing" of the pile yarn.

(2) Place the specimens in a drying oven in a manner that will permit free circulation of the air at 105 °C. (221 °F.) around them for 2 hours.⁵ Remove the specimens from the oven with gloved hands and place them horizontally in the desiccator with traffic surface up and free from contact with each other until cooled to room temperature, but in no instance less than 1 hour.

(d) *Testing.* (1) Place the test chamber in the draft-protected environment (hood with draft off) with its bottom in place. Wearing gloves, remove a test specimen from the desiccator and brush its traffic surface with a gloved hand in such a manner as to raise its pile. Place the specimen on the center of the floor of the test chamber, traffic surface up, exercising care that the specimen is horizontal and flat. Place the flattening frame on the specimen

and position a methenamine tablet on one of its flat sides in the center of the 20.32 cm. (8 in.) hole.

(2) Ignite the tablet by touching a lighted match or an equivalent igniting source carefully to its top. If more than 2 minutes elapse between the removal of the specimen from the desiccator and the ignition of the tablet, the conditioning must be repeated.

(3) Continue each test until one of the following conditions occurs:

(i) The last vestige of flame or glow disappears. (This is frequently accompanied by a final puff of smoke.)

(ii) The flaming or smoldering has approached within 2.54 cm. (1.0 in.) of the edge of the hole in the flattening frame at any point.

(4) When all combustion has ceased, ventilate the hood and measure the shortest distance between the edge of the hole in the flattening frame and the charred area. Record the distance measured for each specimen.

(5) Remove the specimen from the chamber and remove any burn residue from the floor of the chamber. Before proceeding to the next test, the floor must be cooled to normal room temperature or replaced with one that is at normal room temperature.

(e) *Report.* The number of specimens of the eight tested in which the charred area does not extend to within 2.54 cm. (1.0 in.) of the edge of the hole in the flattening frame shall be reported.

(f) *Interpretation of results.* If the charred area does not extend to within 2.54 cm. (1.0 in.) of the edge of the hole in the flattening frame at any point for at least seven of the eight specimens, the small carpet or rug meets the acceptance criterion.

§ 1631.5 Labeling requirements.

(a) If a small carpet or rug does not meet the acceptance criterion, it shall, prior to its introduction into commerce, be permanently labeled, pursuant to rules and regulations established by the Consumer Product Safety Commission with the following statement: FLAMMABLE (FAILS U.S. DEPARTMENT OF COMMERCE STANDARD FF 2-70); SHOULD NOT BE USED NEAR SOURCES OF IGNITION.

(b) If a small carpet or rug has had a fire-retardant treatment or is made of

⁴The vacuum cleaning described is not intended to simulate the effects of repeated vacuum cleaning in service.

⁵If the specimens are moist when received, permit them to air-dry at laboratory conditions prior to placement in the oven. A satisfactory preconditioning procedure may be found in ASTM D 1776-67, "Conditioning Textiles and Textile Products for Testing," ("1969 Book of ASTM Standards," part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103.)